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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Michael Richard Richardson

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EXAMINER

MCKIE, GINA M

ART UNIT

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2611

MAIL DATE

DELIVERY MODE

01/28/2010

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary**Application No.**

10/521,745

Applicant(s)RICHARDSON, MICHAEL
RICHARD**Examiner**

GINA MCKIE

Art Unit

2611

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 November 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 and 3 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 and 3 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. Acknowledgement is made of the amendment filed November 23, 2009. Claims 1 and 3 remain pending in the application.
 - Claims 1 and 3 are currently amended.
 - Claims 2 and 4 have been previously canceled.
 - No claims are new.

Response to Arguments

Claim Rejections - 35 USC § 103

2. Applicant's arguments with respect to the rejection of claim 1 under 35 U.S.C. 103(a) as being unpatentable over Bolin et al. (US 2004/0022175 A1) in view of Dey et al. (US 2005/0073947 A1) have been considered but are moot in view of the new ground(s) of rejection.

New Grounds of Rejection

3. Applicant amended claim 1 to recite, "...establishing time characteristics of the unwanted signal bursts to establish their positions in a portion of said signal..." and argues that the window function of Bolin et al. described in paragraph [0065] is generated "with reference to the boundaries of the useful symbol duration, not the position of unwanted signal bursts which have been assumed constant," (REMARKS, page 4, lines

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9–11). Therefore, the amendment to claim 1 necessitates the new grounds of rejection presented below.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Fielder et al. (US 5,109,417).

Regarding claim 1:

As shown in figures 4-6, Fielder discloses a method for digitally processing a signal in a frequency domain containing regular bursts of unwanted signal (**see col. 15, lines 43-46; “...a discrete transform will erroneously create nonexistent spectral components because the transform assumes the signal in the block is periodic”**), the method comprising the steps of:

- (i) establishing timing characteristics of the unwanted signal bursts to establish their positions in a portion of said signal (**see FIG. 5 and col. 15, lines 46-48; “These transform errors are caused by discontinuities at the edges of the block as shown in FIG. 5”**);

- (ii) generating a time domain window function using said established timing characteristics, said time domain window function being a sinusoidal function having a near-zero crossing substantially coinciding with the position of each unwanted signal burst (**see FIG. 6c and col. 15, lines 48-51; “FIGS. 6a through 6d illustrate how a block is modified or weighted such that the samples near the block edges are close to zero”**)and
- (iii) applying the generated window function to said signal portion to selectively reduce the amplitude of said unwanted signal bursts relative to other elements of said signal (**see FIG. 6d and col. 15, lines 51-55; “The multiplier circuit shown in FIG. 6a modulates the sampled input signal $x(t)$ shown in FIG. 6b by the weighting function shown in FIG. 6c”**).

Fielder discloses that samples near the block edges are *close to* zero, but does not specifically disclose a “zero crossing” substantially coinciding with the position of each unwanted signal burst.

It would have been obvious to one of ordinary skill in the art at the time the present invention was made to make the samples at the block edges zero to better (more completely) eliminate any discontinuities at the block edges. Thus, after applying the window function, the discontinuities at the edges of the finite time interval which cause the transform to create phantom high-frequency components, would be more fully eliminated (**see Fielder, col. 3, line 25 – col. 4, line 47**).

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6. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable Fielder as applied to claim 1 above, and further in view of Daspit et al. (U.S. Patent No. 3,754,101).

Regarding claim 3:

Fielder discloses a method according to claim 1, further comprising the steps of:

- (iv) applying a Fourier transform to the signal output from step (iii) (**see Fielder, col. 17, lines 5-9; “A single FFT can be used to perform the DCT and DST simultaneously...”**).

However, Fielder does not specifically disclose: (v) applying an algorithm to restore the shape of peaks in the transformed signal to an approximation of their form in the absence of said unwanted signal bursts.

Daspit, however, discloses applying an algorithm to restore the shape of peaks in the transformed signal to an approximation of their form in the absence of said unwanted signal elements (**see col. 4, lines 21-24 and 40-44 where Daspit discusses double sideband suppressed carrier amplitude modulation**).

It would have been obvious to one of ordinary skill in the art at the time the applicant's invention was made to modify the invention of Fielder as taught by Daspit and apply an algorithm to restore the shape of peaks in the transformed signal to an approximation of their form in the absence of said unwanted signal elements, thus allowing the retaining of only the useful spectral elements (**Daspit, col. 4, lines 36-40**).

Prior Art Not Relied Upon

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7. The following prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

- Horvat et al. (US 7,027,424 B1) discloses method for avoiding interference in a digital communication system.

Conclusion

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to GINA MCKIE whose telephone number is (571)270-5148. The examiner can normally be reached on Mon-Fri, 9:00 AM-4:00PM.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Shuwang Liu can be reached on 571-272-3036. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Gina McKie/

Examiner, Art Unit 2611

/Shuwang Liu/

Supervisory Patent Examiner, Art Unit 2611